

or telecommunications network, and memory capacity to accommodate automated supply chain techniques. The reporting step is shown as B in FIG. 16. Unit sale information is processed by IT functionality 58 and, if desired, combined with other unit sale information and other information relating to the particular point of sale 57 and, if desired, other points of sale, and if desired other information about which inventory of product should be prepared and delivered to point of sale 57. This information is at least part of the basis for logistics information which IT functionality 58 sends to processing facility 60. IT functionality 58 may also track and manage information relating to transportation units. Such tracking is shown as Step D in FIG. 16. Transportation unit information can include information about location, manifest, and availability of trucks and other transportation units. IT functionality 58 can correlate transportation unit information with logistics information if desired and forward transportation required information to a transportation facility 62. Transportation facility 62 may be part of, co-located, separate from, distantly located, or otherwise positioned to manage units in a fleet for delivering inventory from one or more processing facilities 60 to one or more points of sale 57. Forwarding of transportation required information to transportation facility 62 is shown as Step E in FIG. 16. Based at least in part on logistics information delivered in Step C, processing facility, using a stack of trays 44 in accordance with the present invention on a processing line 46, or multiple processing lines 46, packages product 14 into units 10, stores units 10 if desired. This is shown as Step F in FIG. 16. Based in least in part on logistics information delivered in Step C, at the appropriate time processing facility 60 prepares a shipment of product for the particular point of sale 57. The shipment may contain multiple units of product such as T-bone steaks, ribs, ground beef, pork chops, salmon filets, and other products in various forms and sizes of packaging, at least some of which are manufactured in accordance with the present invention and labeled as desired. This is shown as Step G in FIG. 16. A transportation unit is deployed to processing facility 60 based at least on part of transportation unit information directly from IT facility 58, indirectly from processing facility 60 or otherwise. This is shown as Step H in FIG. 16. In Step I, transportation unit is loaded with shipment of units 10 which is then transported to point of sale 57, unloaded, displayed and sold. Sale information is captured as in Step A and the supply chain or logistics management process continues to manufacture, store, and ship process to multiple points of sale based at least in part on unit 10 sales at the various points of sale.

The structures and processes described above illustrate particular instantiations of the inventive concepts included in the present invention. Other structures and processes which achieve tray spacing and facilitate fast, efficient, reliable product packaging and, if desired, doing so in an environment that allows product to be packaged at a processing facility distant from points of sale and transported to points of sale based on an automated inventory tracking and management system, and various steps in carrying out these processes may be modified, without departing from the scope or spirit of the invention.

What is claimed is:

1. A process for preparing case ready meat products for shipping and sale, the meat products thereby adapted to be displayed for sale in a display case at a retail point of sale, comprising:

A. providing a plurality of a first nonfoam trays having a bottom and walls;

the first trays having a plurality of separation structures; the separation structures adapted to cause the trays to denest automatically from other trays;

B. providing a plurality of second nonfoam trays having a bottom and walls;

the second trays having a plurality of separation structures;

whereby at least some of the separation structures on the second trays are positioned at locations on the second trays different from the locations at which corresponding separation structures on the first trays are located;

the separation structures adapted to cause the trays to denest automatically from other trays;

C. whereby the first and second trays are provided in a stack in which at least some of the first trays are interleaved with at least some of the second trays in order to promote denesting of the trays in a dispensing station;

D. dispensing the trays from the stack in a dispensing machine;

E. placing case ready meat product into at least some of the trays, the meat product ready to be displayed for sale in a display case at a retail point of sale; and

F. sealing at least some of the trays and meat products with a closure.

2. A process according to claim 1 wherein the separation structures comprise lugs located on said walls of said trays.

3. A process according to claim 2 wherein each tray contains at least 4 lugs.

4. A process according to claim 1 wherein at least some of the separation structures on the first tray are different in shape from at least some of the separation structures on the second tray.

5. A process according to claim 1 wherein the closures comprise film.

6. A process according to claim 1 wherein the trays are formed of material adapted to withstand automatic dishwasher cleaning and cooking of the meat product in the trays in an oven without substantial deformation of the trays.

7. A plurality of combinations according to claim 6, wherein the oven is a microwave oven.

8. A plurality of combinations according to claim 6, wherein the oven is a conventional oven.

9. A plurality of combinations according to claim 1, wherein the trays comprise a gas barrier.

10. A process for preparing case ready meat products for shipping and sale, the meat products thereby adapted to be displayed for sale in a display case at a retail point of sale, comprising:

A. providing a plurality of a first nonfoam trays having a bottom and walls;

the first trays having a plurality of separation structures; the separation structures adapted to cause the trays to denest automatically from other trays;

B. providing a plurality of second nonfoam trays having a bottom and walls;

the second trays having a plurality of separation structures;

whereby at least some of the separation structures on the second trays are shaped differently than corresponding separation structures on the first trays;

the separation structures adapted to cause the trays to denest automatically from other trays;

C. whereby the first and second trays are provided in a stack in which at least some of the first trays are

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interleaved with at least some of the second trays in order to promote denesting of the trays in a dispensing station;

D. dispensing the trays from the stack in a dispensing machine;

E. placing case ready meat product into at least some of the trays, the meat product ready to be displayed for sale in a display case at a retail point of sale; and

F. sealing at least some of the trays and meat products with a closure.

11. A process according to claim 10 wherein the separation structures comprise lugs located on said walls of said trays.

12. A plurality of combinations according to claim 11 wherein each at least 4 lugs.

13. A process according to claim 10 wherein at least some of the separation structures on the first tray are located at the same locations on the first tray as at least some of the separation structures are located on the second tray.

14. A plurality of combinations according to claim 10 wherein at least some of the separation structures on the first tray are not located at the same locations on the first tray as at least some of the separation structures are located on the second tray.

15. A process according to claim 10 which the closures comprise film.

16. A process according to claim 10 wherein the trays are formed of material adapted to withstand automatic dishwasher cleaning and cooking of the meat product in the trays in an oven without substantial deformation of the trays.

17. A process according to claim 16, wherein the oven is a microwave oven.

18. A plurality of combinations according to claim 16, wherein the oven is a conventional oven.

19. A process according to claim 10, wherein the trays comprise a gas barrier.

20. A process for preparing case ready meat products for shipping and sale, the meat products thereby adapted to be displayed for sale in a display case at a retail point of sale, comprising:

A. providing a plurality of a first nonfoam trays having a bottom and walls;

the first trays having a plurality of separation structures; the separation structures adapted to cause the trays to denest automatically from other trays;

B. providing a plurality of second nonfoam trays having a bottom and walls;

the second trays having a plurality of separation structures;

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whereby the separation structures on the second trays are adapted not to nest with separation structures on the first trays;

the separation structures adapted to cause the trays to denest automatically from other trays;

C. whereby the first and second trays are provided in a stack in a manner so as to automatically denest in a dispensing station;

D. dispensing the trays from the stack in a dispensing station;

E. placing case ready meat product into at least some of the trays, the meat product ready to be displayed for sale in a display case at a retail point of sale; and

F. sealing at least some of the trays and meat products with a closure.

21. A process according to claim 20 wherein at least some of the separation structures on the first trays are positioned on the first trays at locations different than the positions on the second trays at which at least some of the separation structures on the second trays are located, in order to cause separation structures on the first trays not to nest with separation structures on the second trays.

22. A process according to claim 20 wherein at least some of the separation structures on the first trays are shaped differently from at least some of the separation structures on the second trays, in order to cause separation structures on the first trays not to nest with separation structures on the second trays.

23. A process according to claim 20 wherein the separation structures have the same shape on all trays and are located in the same position on all trays.

24. A process according to claim 20 wherein the separation structures comprise lugs located on said walls of said trays.

25. A process according to claim 21 wherein each tray contains at least 4 lugs.

26. A process according to claim 20 wherein the trays are formed of material adapted to withstand automatic dishwasher cleaning and cooking of the meat product in the trays in an oven without substantial deformation of the trays.

27. A process according to claim 26, wherein the oven is a microwave oven.

28. A process according to claim 26, wherein the oven is a conventional oven.

29. A process according to claim 20, wherein the trays comprise a gas barrier.

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